

Permashield

Dry-Shake Topping for Performance Concrete Floors

DATASHEET ISSUE 1.3

05 JANUARY 2009

GENERAL

Permashield is a non-oxidising chemically inert pre-blended dry shake powder. It combines high strength cements with inert hard aggregates including inert hard aggregates produced by metallurgical processing. When trowelled into the fresh wet surface of concrete floors it produces a dense, hardened, wear resistant surface, which is smooth, slip resistant and non-dusting. The surface is highly durable, low-maintenance and housekeeping is straightforward. Permaban are pleased to provide clients with the opportunity to view the floor in use elsewhere. We are also pleased to provide clients with an Operating Manual for the floor.

APPLICATION:

Permashield is highly versatile and provides a hard durable surface. This means that it is suitable for use in many types of application. To help the specifier, listed below is a selection of the applications where it has been used most often.

- Heavy Duty Engineering and Workshops
- Aircraft Hangars
- Cash and Carry
- Printing Works
- Factories

METHOD OF USE:

Permashield is supplied in 25 kg or 1 tonne bags as a ready to use powder. It is spread evenly onto the wet concrete surface at an overall rate of 5 kg/m². (3 kg/m² for light to medium duty, non-colour applications only). When using a telescopic laser screed and a telescopic dry shake topping spreader, it is applied immediately after screeding. For semi-mechanical or hand application Permashield is applied in two separate applications (adding up to the required overall application rate) after the surface bleed water has either been removed or evaporated.

Particular attention should be paid to the concrete mix design (including fine aggregate grading) prior to laying to consider any issues such as late bleeding etc.

Concrete surface treatment and finishing with pans and trowels is carried out as normal.

After final finishing, Permaban Aquacure curing agent is applied to cure the surface.

For more detailed instructions see the separate technical data sheet "Permaban Dry Shakes Instructions for Use".

TECHNICAL SUPPORT:

Permaban technical support is available to you at all phases of the project - planning, pre-works, installation and aftercare. For the floor to be presented in the best condition, conforming to specification, all relevant conditions and factors which may have an effect must be addressed with sufficient priority in the project. Permaban technical representatives cannot be held responsible for defects in the finish which are a result of bad planning, omission of detail at pre-works phase, contractors "work-arounds" during installation etc.

CHEMICAL RESISTANCE:

Permashield has excellent resistance to a wide range of chemicals including many aggressive solvents. It is not recommended for regular exposure to acidic materials. For a full list of specific compounds, please refer to the Chemical Resistance technical data sheet.

ABRASION RESISTANCE:

The floor abrasion resistance exceeds every abrasion test requirement in BS8204: Part 2: 2002, Table 4 and Concrete Society Technical Report TR34 3rd Edition Table 5.1. In these documents severe abrasion duty allows a maximum 0.05 mm of wear in the test. 14 days after laying the floor, Permashield achieved a depth of wear of only 0.01 mm in this test (i.e. better by a factor of 5).

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REDUCED SLAB SHRINKAGE:

By the use of this dry shake topping the floor achieves high surface durability without the need for high cement content in the concrete supplied. Thereby the slab shrinkage is reduced, which reduces the risk of cracking and other undesirable effects. Ref. Concrete Society TR34 3rd Edition p.70 "The main factors influencing drying shrinkage are the volume of cement paste and its water content. High cement contents should be avoided...".

FAST TRACK MONOLITHIC CONSTRUCTION:

Permashield is applied as part of the freshly poured concrete slab. This enables the flooring contractors to achieve rapid construction of extremely large floor areas. No special handling or mixing is required. Site costs are kept to a minimum and there are none of the bonding problems associated with other flooring systems.

ECONOMY:

Permashield is a "once and for all" treatment making its initial cost an outstanding investment for any floor duty.

RELIABILITY & SHELF LIFE:

All our natural and coloured dry shake concrete floor hardeners are subject to quality control and rigorous testing to industry standards. Permaban have full accreditation to ISO 9001 and all our dry shakes are manufactured under this specification.

The declared shelf life of all our dry shake products is 6 months from the production date indicated on the product packaging and is dependent on storage conditions. All Permaban dry shake products contain cement and must be stored in unopened bags, kept clear of the ground and in cool dry conditions, protected from excessive draughts and frost.

COLOUR RANGE:

Dark Colours: Dark Grey, Tile Red, Terracotta & Mustard
Light Colours: Light Grey, Mid Grey, Mid Green & Bottle Green
Special Colours: Light Green

*Colours can also be mixed to order

**NOTE: Any colour samples provided are indicative-only of the finished colour. Shade variations occur with changes in the base concrete, ambient conditions at the time of application, power trowelling etc. The colour of the dry shake floor will also lighten and become less variable as the slab drying out period proceeds. As a rule-of-thumb guide the drying period for a slab is 1 day for every mm of slab thickness.

MOHS HARDNESS:

7+

AGGREGATE ABRASION VALUE:

5.4 (BS812: Part 113:1989)

POLISHED STONE VALUE:

58 (BS812: Part 114:1989)

HEALTH & SAFETY:

Please see separate detailed H&S datasheets.

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SPECIFICATION CLAUSE:

Permashield Natural & Colour

"Following placing and levelling of the concrete, the floor shall be hardened by the application of Permaban Permashield Light Grey* dry shake hardener applied at the rate of 5 kg/m². The dry shake hardener shall be applied strictly in accordance with the current product technical data sheets, specification and Instructions for Use by a Permaban approved contractor and shall be finished by repeated passes with a power trowel to provide a fully closed dense consistent surface finish.

Material requiring site batching shall not be approved.

The manufacturer shall be registered to ISO 9001 Quality Assurance.

After finishing the power trowelling operation Permaban Aquacure curing agent shall be applied in accordance with the current Aquacure product technical data sheets, specification and Instructions for Use.

The dry shake hardener shall have been tested for abrasion resistance to BS8204: Part2: 2002 Table 4 Classification of Abrasion Resistance and limiting depths of wear for the accelerated abrasion test and achieved an abrasion wear of less than 0.01 mm on concrete of strength not greater than 35 N/mm² and with a cement content of not greater than 325 kg/m³.

The floor shall be constructed in a weatherproof structure. Apart from saw cutting of induced joints, the floor shall be left undisturbed for 3 full days after construction. The main contractor shall provide and maintain protection from any subsequent site operations in this contract."

NOTES FOR GUIDANCE:

Use NBS Clause E41 Worked Finish

* Specify the colour required or "Natural". If colour required but not decided specify "Colour". See list of colours above.



ISO 9001
PM 532835



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